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CONTROL SYSTEM

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NATIONAL RECONNAISSANCE OFFICE
WASHINGTON, D.C.

OFFICE OF THE DIRECTOR

March 20, 1970

MEMORANDUM FOR Assistant to the President for National
Security Affairs
Attorney General
Deputy Secretary of Defense
Under Secretary of State (Political Affairs)
Director of Central Intelligence
Executive Secretary, 40 Committee

SUBJECT: TAGBOARD Missions

Following is a brief summary of the November 10, 1969
operational mission and the February 20, 1970 test mission.
A summary of all flights to date is attached.

TAGBOARD flew its first limited operational mission
over South China on November 10, 1969. Launch and early
flight were successful as the drone obtained the programmed
altitude of 84,000 feet and a cruise mach of 3.27. During
the terminal phase of the flight the drone was not acquired
(visually or electronically) and the payload was not recovered.

NSA reported no SIGINT that could be correlated with
the mission. The drone's position was fixed at only 50 miles
off the Island of Hainan and 80 miles from the China mainland,
just prior to the drone's telemetry being turned off on the
inbound track well within range of coastal air defense radars.
The drone's operating altitude, speed and small radar cross
section (.2 sq meter frontal area with a 15° depression
angle) give it a high probability of survival.

Investigations and laboratory simulations now indicate
that computational errors in the drone's inertial navigation
system (INS) prevented the drone from flying the programmed

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NRO review(s)
completed.

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route. Self destruction probably occurred after fuel exhaustion upon descent at the pre-set altitude [REDACTED]. Software changes have since been made and tested to correct the computational errors, and a "fail safe" feature has been incorporated in the INS that will provide positive control of the drone's flight path.

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On February 20, 1970, TAGBOARD flew a completely successful test mission to validate the software and "fail safe" changes to the INS program. [REDACTED]

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The TAGBOARD system is now ready for another operational test mission. Drones are located at Beale AFB and are ready for flight.

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1 Attachment
Summary of Flights

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SUMMARY OF TAGBOARD B-52 LAUNCHES

November 6, 1967. Drone #507. PMR. (PACIFIC MISSILE RANGE)

Launch and boost were successful. Drone attained a mach [REDACTED] Cruise flight was not sustained due to low inlet recovery; deformed inlet cone primary suspect. Drone travelled 134 miles down range and the hatch was not recovered.

December 2, 1967. Drone #509. PMR.

Launch and boost were successful. Free flight continued on course for [REDACTED] feet less than normal). Flight terminated prematurely after failure of the hydraulic system and subsequent loss of control. The hatch was not recovered.

January 19, 1968. Drone #508. PMR.

Launch and boost were successful. The drone travelled 550 miles down range, then the flight terminated prematurely when the drone began a pitch down and roll to the left. Telemetry was lost. Most probable cause of failure was electrical malfunction. The hatch was not recovered.

April 30, 1968. Drone #511. PMR.

Launch and boost were successful. Following booster ejection, the drone was unable to sustain cruise and lost altitude and speed due to low thrust from the engine (inlet not started). Drone travelled 150 miles down range and was destroyed. Hatch not recovered.

June 16, 1968. Drone #512. PMR.

Successful test flight. [REDACTED]

The hatch was air-recovered by JC-130 aircraft.

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July 1, 1968. Drone #514. PMR.

During pushover at the top of boost phase, the drone became laterally unstable due to insufficient autopilot gains. At separation, the booster struck the drone, rupturing the drone's fuel tank. The hatch ejected upon command and was recovered from the water in good condition.

August 28, 1968. Drone #516. PMR.

Launch and boost were successful. However, the drone's engine remained at minimum power and cruise altitude was not maintained. The hatch ejected at an excessive speed on descent and was not recovered.

December 15, 1968. Drone #515. PMR.

Successful test flight. [REDACTED]

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[REDACTED] This was the first mission to test the total system with the camera aboard. The hatch was air-recovered by JC-130.

February 11, 1969. Drone #518. PMR.

Launch and boost successful. Apparent shift in autopilot control at excessive mach caused the drone to descend resulting in the inlet remaining only partially started with attendant loss in thrust. Severe oscillations resulted. Drone believed to have structurally destroyed itself. Hatch was not recovered.

May 10, 1969. Drone #519. PMR.

Successful test flight. [REDACTED]

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[REDACTED] Hatch was air recovered by JC-130.

July 10, 1969. Drone #520. PMR.

Successful test flight. [REDACTED]

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[REDACTED] Hatch was air-recovered by JC-130.

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November 10, 1969. Drone #517. First operational mission.

Launch and boost successful. Computational errors in the drone's Inertial Navigation System prevented drone from flying the programmed route. Self-destruct believed to have occurred upon descent at [] feet. Hatch was not recovered. 25X1A

February 20, 1970. Drone #521. PMR. 25X1A

Successful test flight. []

[] Changes to INS program validated.
Hatch was air-recovered by JC-130.

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